

# Pittsburgh's Economic Transformation

or

## How I Learned to Stop Worrying and Love Regional Innovation Clusters

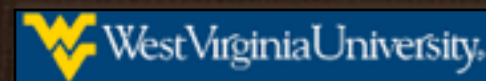
Christina Gabriel, Sc. D.

Bomani M. Howze, MBA

University Energy Partnership

Carnegie Mellon ● Penn State ● Pitt ● VA Tech ● West Virginia

**Carnegie Mellon**





# “Hell With the Lid Off”





# Jane Jacobs on Pittsburgh, 1969

“If such a ruined city  
is ever to be revitalized,  
its development processes  
may have to begin over again,  
much as if it were an embryonic city.”

from The Economy of Cities



# Pittsburgh Population

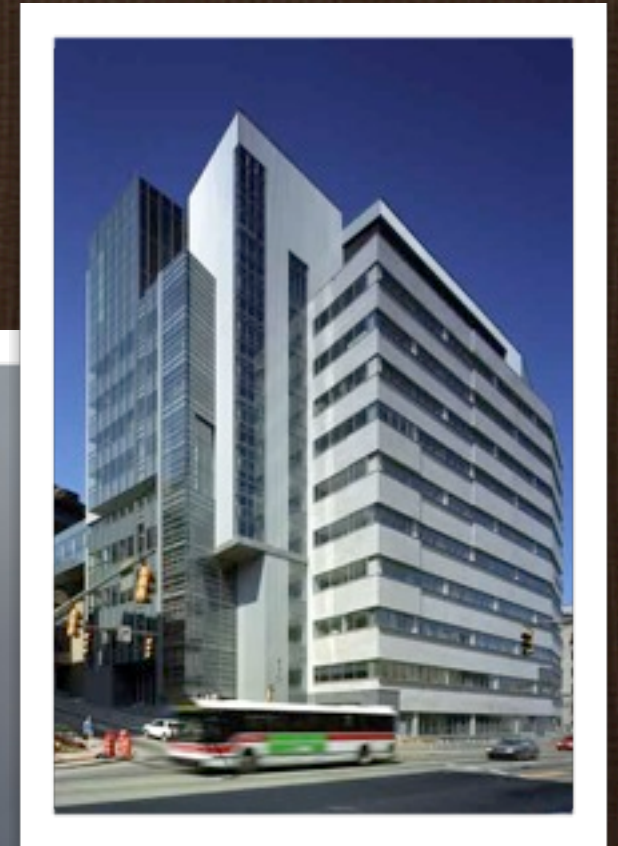
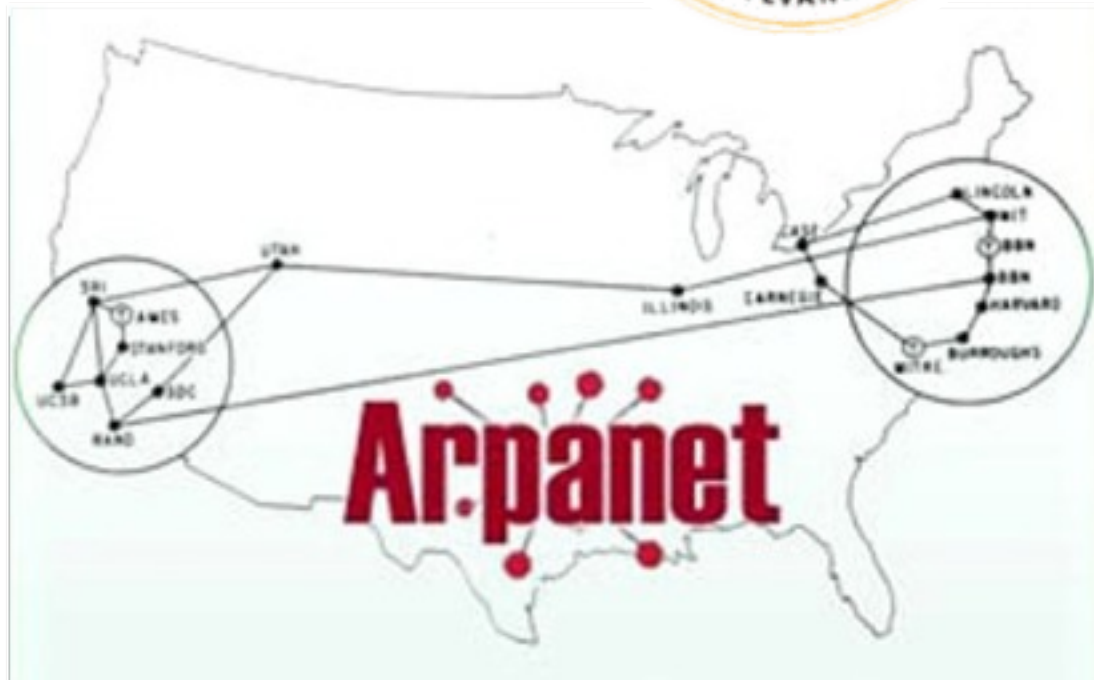
Peak, 1950: 677,000

1980: 424,000

Today, 2010: 306,000



# Economic Diversification and Growth around “Eds & Meds”





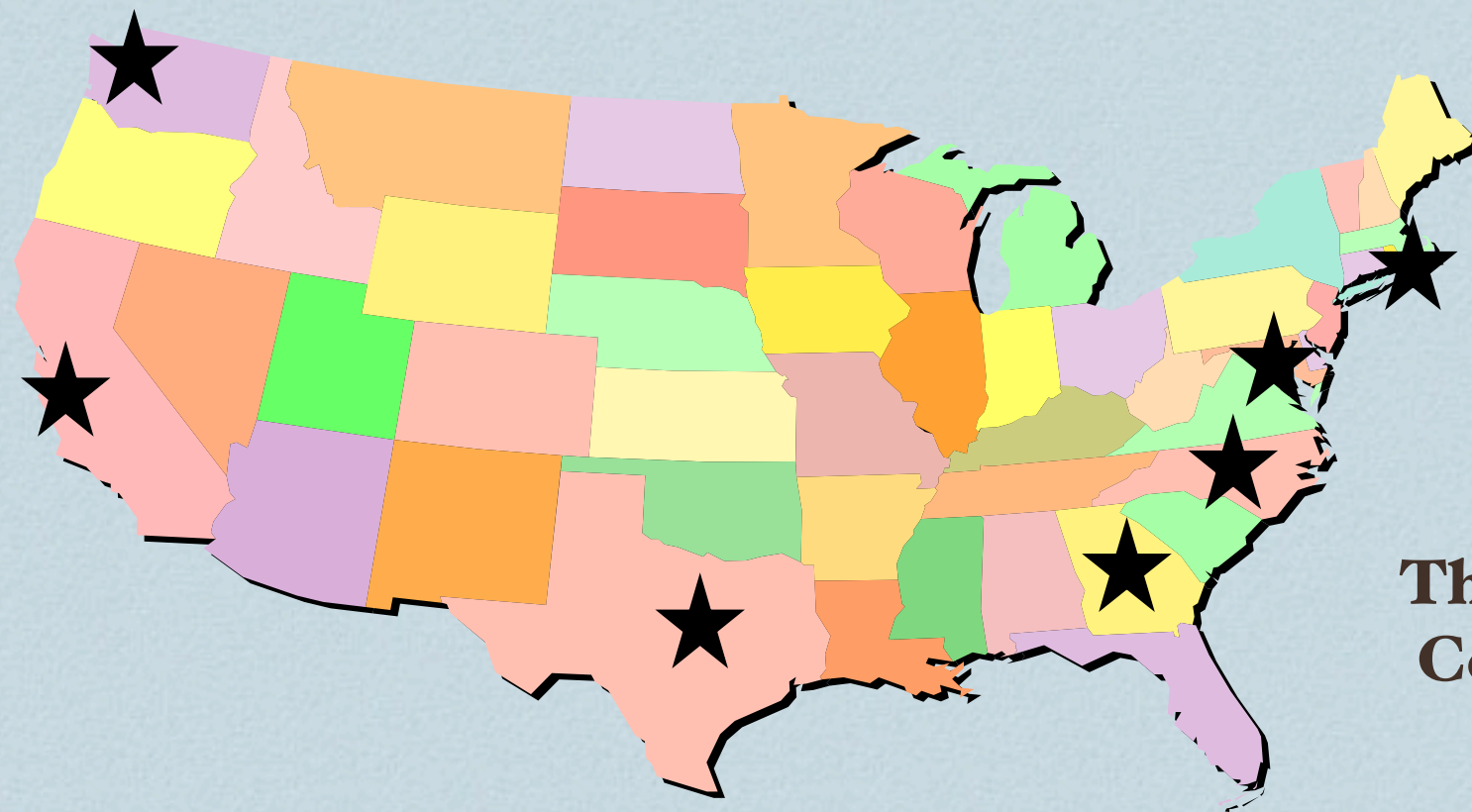
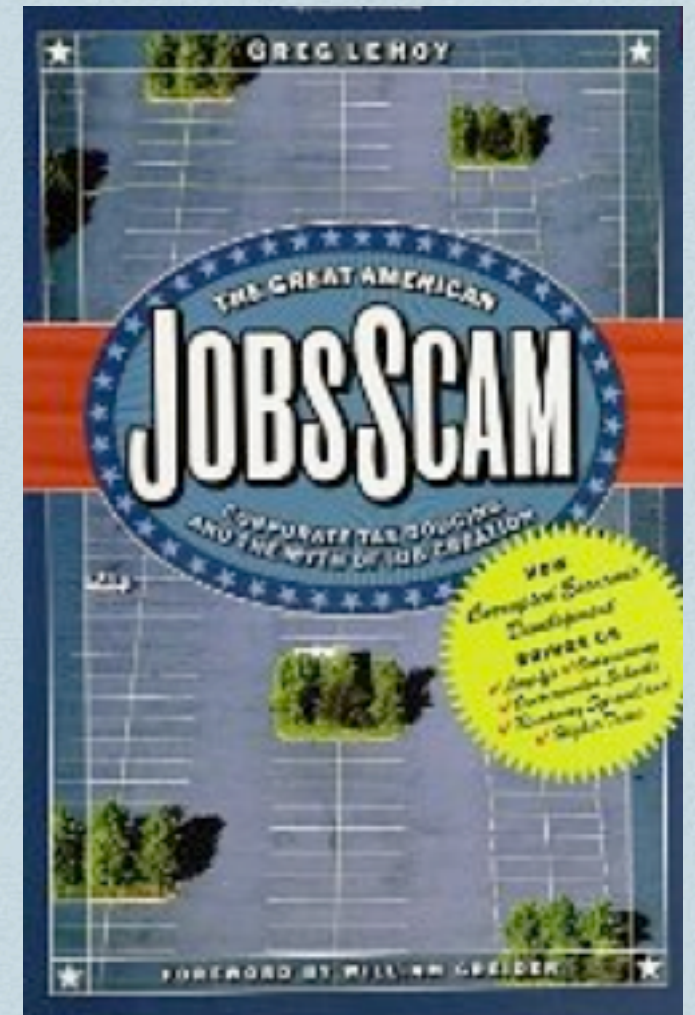
# Trend Toward Open Innovation

- ❖ 1980: Bayh-Dole Act stimulated technology transfer from universities & federal labs
- ❖ 1982: Small Business Innovation Research (SBIR)
- ❖ 1986: First Engineering Research Centers awarded by the National Science Foundation
- ❖ 1990: Michael Porter promotes “clusters of innovation”
- ❖ 1993: “Mosaic” web browser launched at NSF-funded supercomputing center at U. Illinois at Urbana-Champaign
- ❖ 1994: Annalee Saxenian describes Silicon Valley’s open, permeable networking culture as a “regional advantage”



# Meanwhile... State & Local Government Initiatives

- ❖ **“Economic War Among the States”**
- ❖ **Regional Innovation Clusters**  
Silicon Valley, Silicon Alley, Silicon Prairie, ...



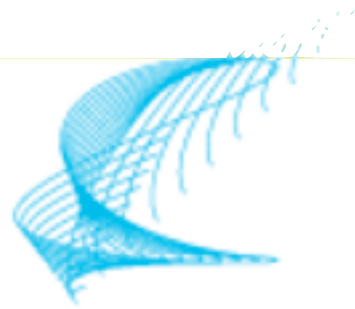
**The Great American Jobs Scam:  
Corporate Tax Dodging and the  
Myth of Job Creation**  
by Greg LeRoy (2005)



# In Southwestern Pennsylvania, Collaboration between Government & Foundations

“Hyper-Organized” Region\* of Technology-Based Economic Development Organizations (TBEDs)

\* Xavier de Souza Briggs, **Democracy as Problem-Solving**, (2008)



Innovation Works



PittsburghGateways

*A Bridge to Economic, Social and Cultural Vitality*



**THE TECHNOLOGY COLLABORATIVE**

Accelerating Digital & Robotic Innovation.

idea foundry



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*forging partnerships • transitioning technology • building businesses*

PITTSBURGH DIGITAL  
**GREENHOUSE**  
growing smart products



PITTSBURGH

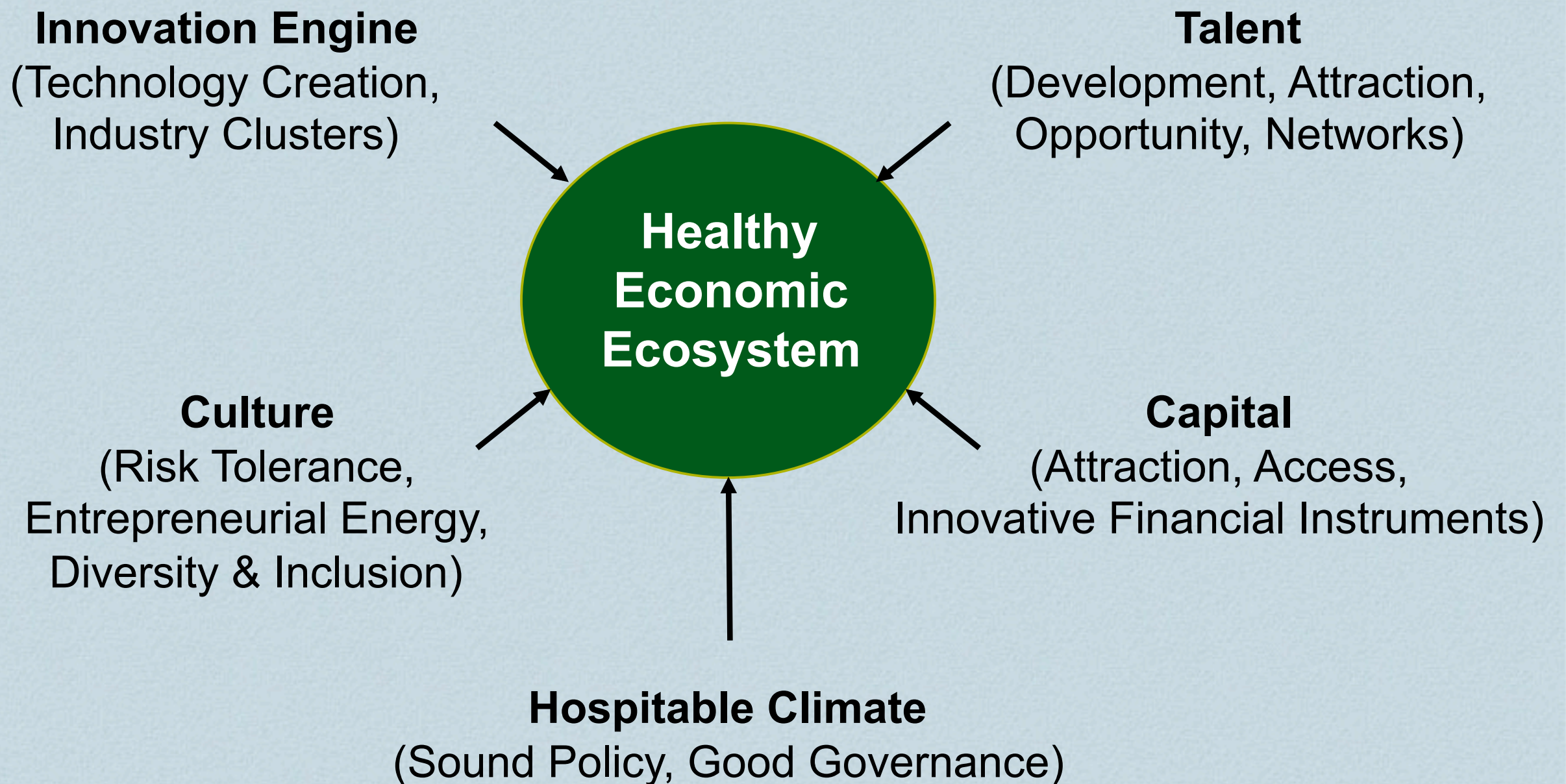
**Life Sciences**

GREENHOUSE

*Discovery. Market. Community.*



# Successful Innovation Clusters: World-Class Assets & Seamless Connections Among them





# How Regions Have Created Successful “Innovation Economies”

## Strong R&D asset base

- Anchor firms
- Research universities
- Government labs

## Sophisticated business resources

- Experienced investors – risk capital, connections
- World-class talent at all levels
- Global connections for markets and recruitment

## Active networks of people – Transfer both technology and “tacit knowledge”

## Help an industry cluster grow around the asset base

- Business-friendly tax policy – create a hospitable playing field
- State and local government investment
- Regional coordination of effort to focus on sectors of competitive advantage

Focus on world-class strengths: Excellence Attracts Excellence





# Federal Policy and Funding Helped Create the Nation's Strongest Innovation Clusters



How Can We Create  
More of These  
Successful Economic  
Engines in Regions  
Across the Nation?



# Federal Policy and Funding Helped Create the Nation's Weakest Economic Communities



**Root Shock** by Mindy Thompson Fullilove, M.D.  
Ballantine/One World, 2004

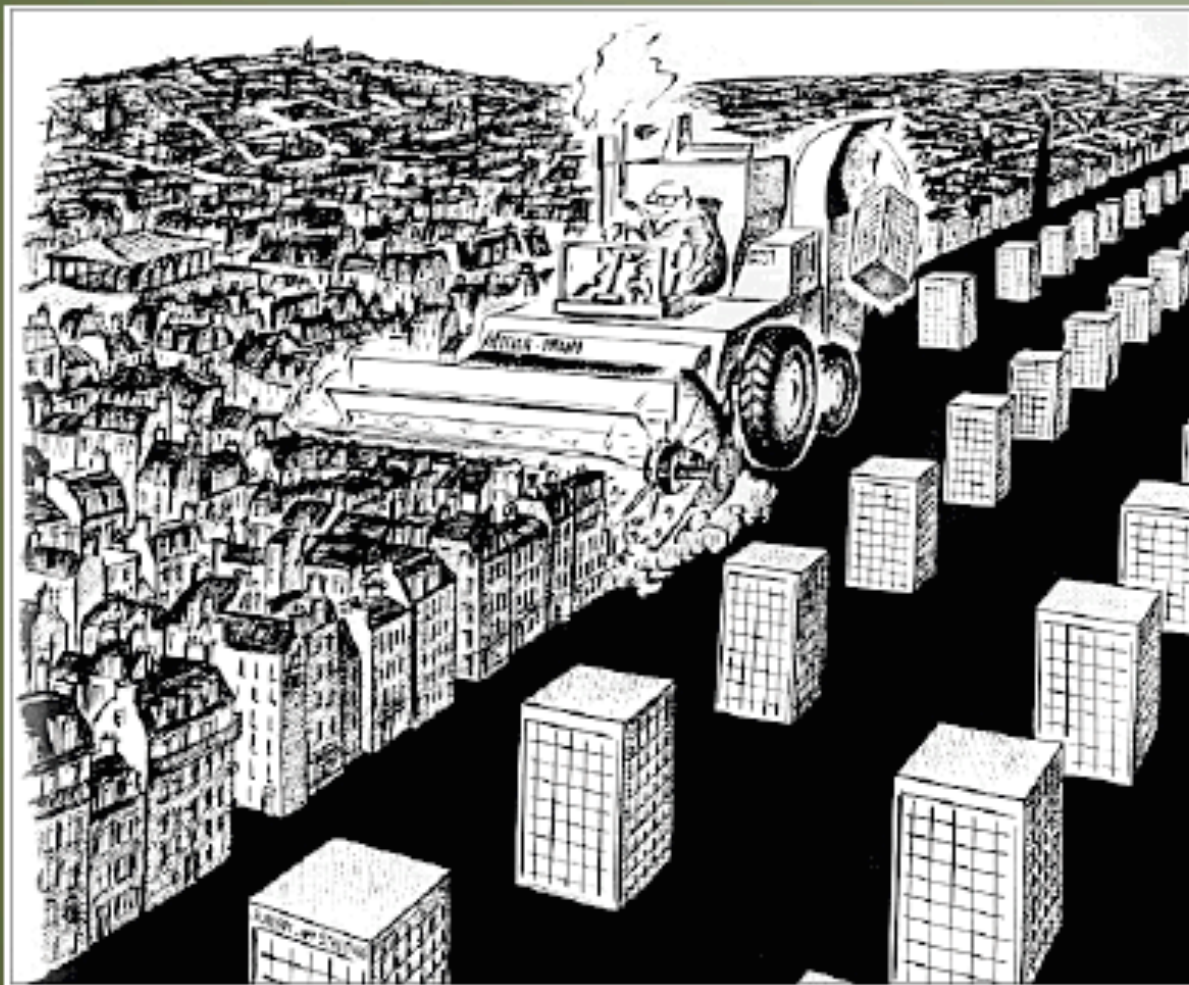
How Can We Use the  
Economic Engines of  
Innovation Clusters to  
Offer New Opportunity  
and Revitalize these  
Communities?



# Policy Case Study: Urban Renewal

Post WWII Premise: Cities declining because of aging buildings & outdated street grid patterns

Federal Policy: Modernize whole sections of cities; cover 2/3 of cost



J-F. Batelier, "Corbu Combine," 1993. Reprinted in **Root Shock** by Mindy Thompson Fullilove, M.D. Ballantine/One World, 2004

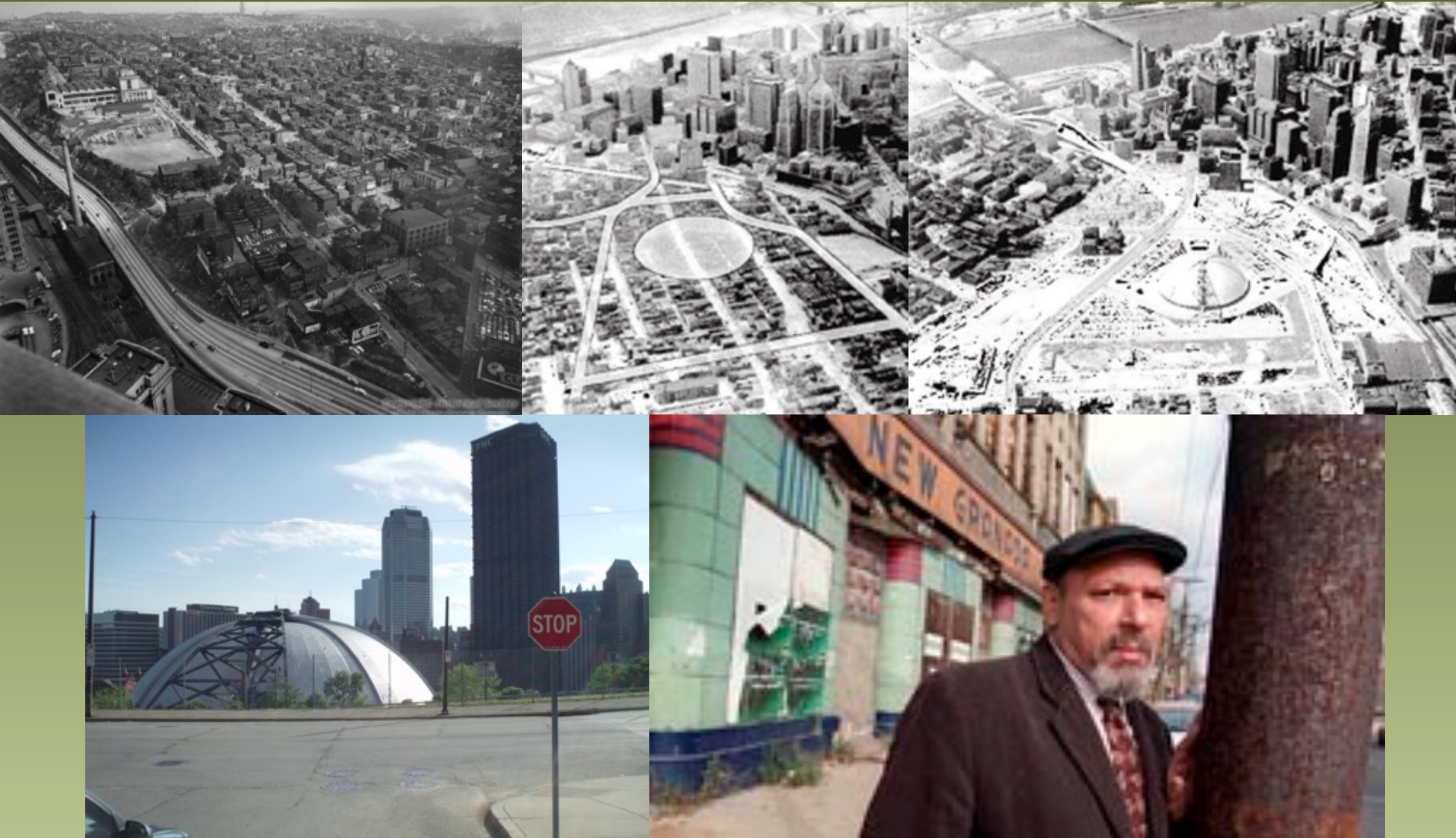
Aggressive implementation

- Top-down leadership
- Little community input, little concern for dissenting experts (e.g. Jane Jacobs)
- 2532 projects in 992 cities
- 25 years and \$12.7 billion in federal subsidies



# Pittsburgh's Failed Projects

#3: Hill District. August Wilson's Neighborhood is Bulldozed to Build a Civic Arena and Parking Lot





# Broadly Shared Prosperity is not Automatic

## TWO OCTOBER 2010 REPORTS

### Best-Performing Cities 2010

Where America's Jobs Are Created and Sustained

- Washington–Arlington–Alexandria, DC–VA–MD–WV, was the top performer among the 10 largest metros and an impressive sixth in the overall rankings.

Looking over a longer-term period, employment prospects have worsened noticeably over the past two decades for Black District residents and for residents with no post-secondary education. For these residents, job conditions have worsened even in periods when DC's overall economy was growing.

Ross C. DeVol,  
Armen Bedroussian,  
Kevin Klowden, and  
Candice Flor Hynek

October 2010

 MILKEN INSTITUTE



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October 13, 2010

### PACKING A PUNCH: THE RECESSION HIT AFRICAN-AMERICAN AND NON-COLLEGE EDUCATED DC RESIDENTS PARTICULARLY HARD

for those with less than a four-year college education.

The number of jobless workers living in the District more than doubled in a two-year period — from 19,000 in January 2008 to 40,000 in January 2010 — as the unemployment rate rose from 5.6 percent to 12.0 percent. By January 2010, DC's unemployment rate was the highest since such data were first collected in 1976.

the recession are broad, African-Americans and non-college educated DC residents were especially hard hit.

- The unemployment rate for African-American DC workers reached 15.8 percent in 2009. While the Latino unemployment rate was lower — 8.4 percent — the jobless rate grew faster for Latinos than for any other group.

unemployment rate for African-American residents rose by roughly half — from 10.4 percent to 15.6 percent — the highest rate by race/ethnicity in the city. For white residents, unemployment rose from 3 percent to 4.1 percent in this period.

- Wages rose for residents at all levels in 2009, but wage disparities have widened. Since 2000, wages for DC's top earners rose 29 percent, adjusting for inflation, while earnings of low-wage workers rose 11 percent.

- In fact, unemployment among DC residents with a high school education in 2009 was nearly as high as for those without a high school education. Unemployment reached 19 percent in 2009

<sup>1</sup> Max Boser served as an intern with DCFPI in the summer of 2010.



# Clusters Form Where Amenities Are and Avoid Distressed Areas Pittsburgh Example

Downtown  
“Golden  
Triangle”  
Business  
District

Hill  
District

Oakland - Universities  
& Medical Centers

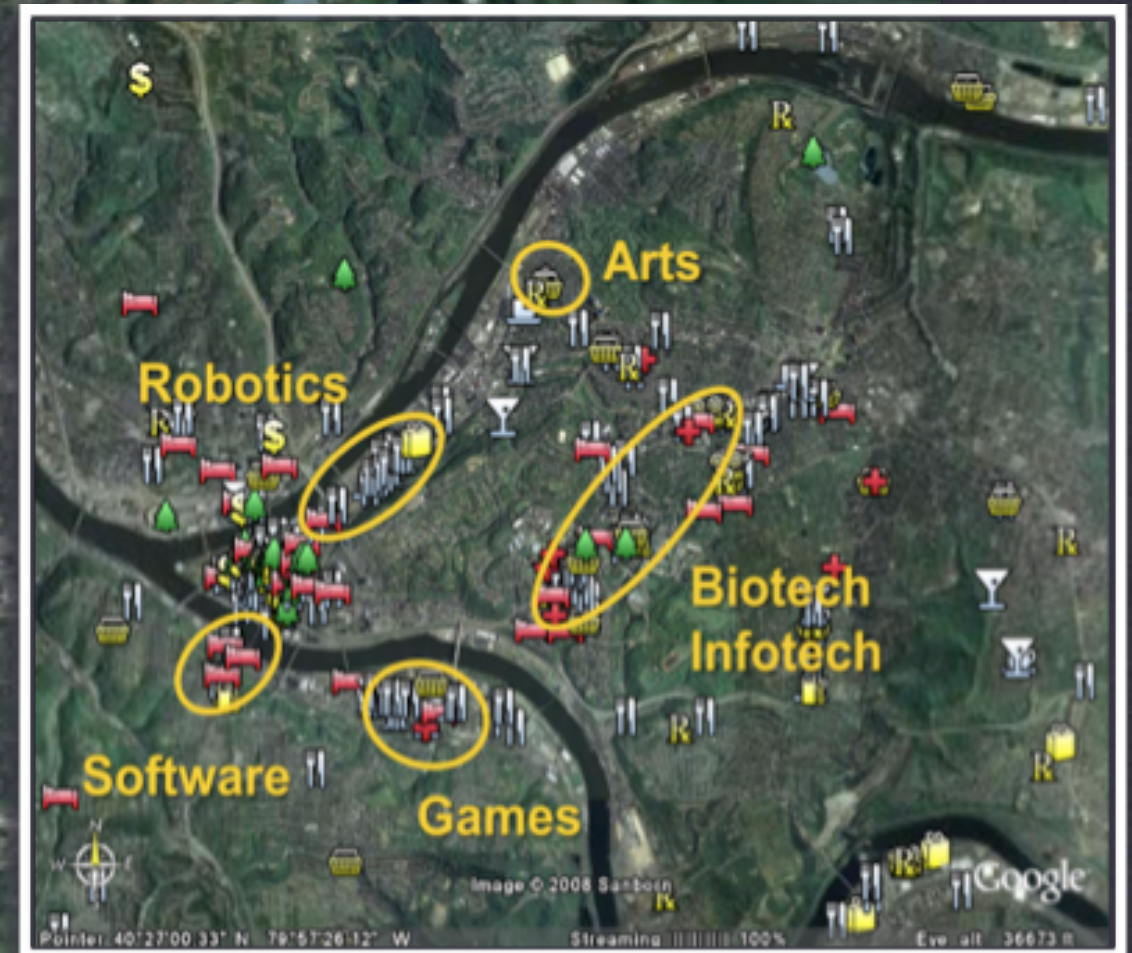


Image © 2008 Sanborn

Google

Pointer: 40°27'00.33" N 79°57'26.12" W

Streaming: 100%

Elev. alt: 36673 ft

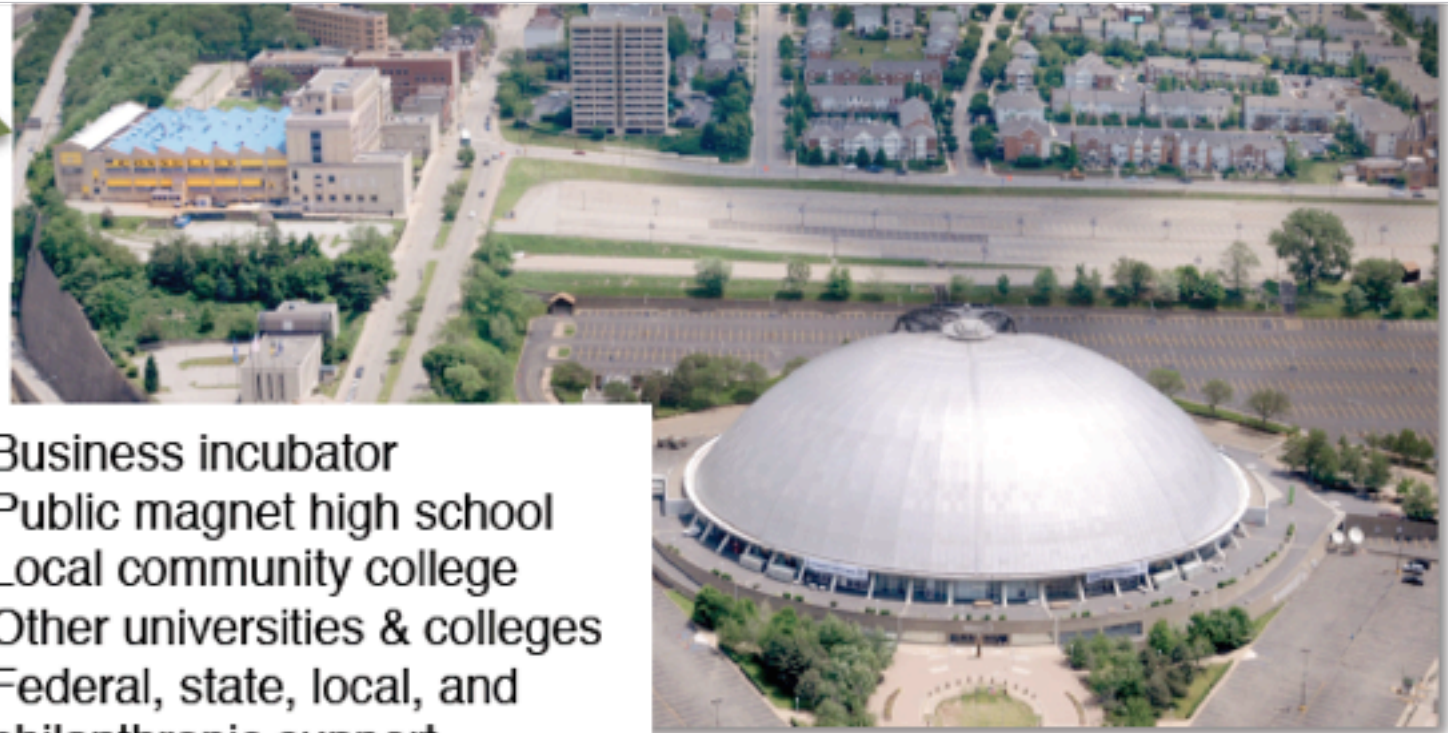


# Super-Collaboration Center

## New Use for an Old Urban Renewal Site

### Demonstration Project:

Reuse an old public school facility  
Connect the education-workforce pipeline  
Reconnect the Hill District to the economy



### Broad regional collaboration:

Penn State biofuels research lab  
Operating Engineers Local 95 training  
Nonprofits — e.g. Green Building Alliance,  
Green For All, economic development groups  
Tech companies, corporate collaborators  
Grassroots community organizations

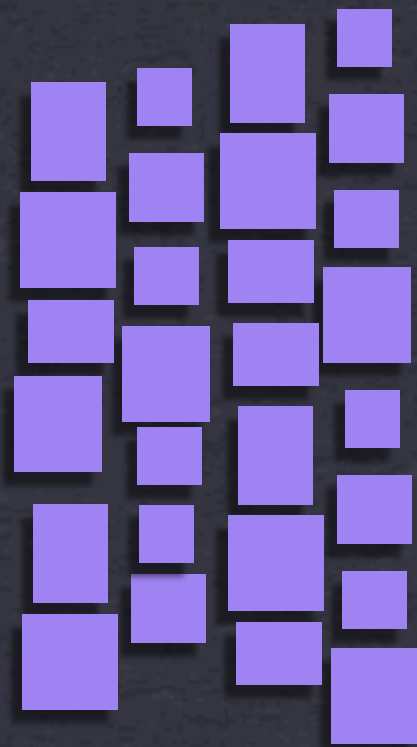
Business incubator  
Public magnet high school  
Local community college  
Other universities & colleges  
Federal, state, local, and  
philanthropic support





# Trend in US Manufacturing

**1950's**



**Large, Vertically  
Integrated  
Corporations**



**Today**



**Urban Clusters - Many Small,  
Specialized Manufacturers**

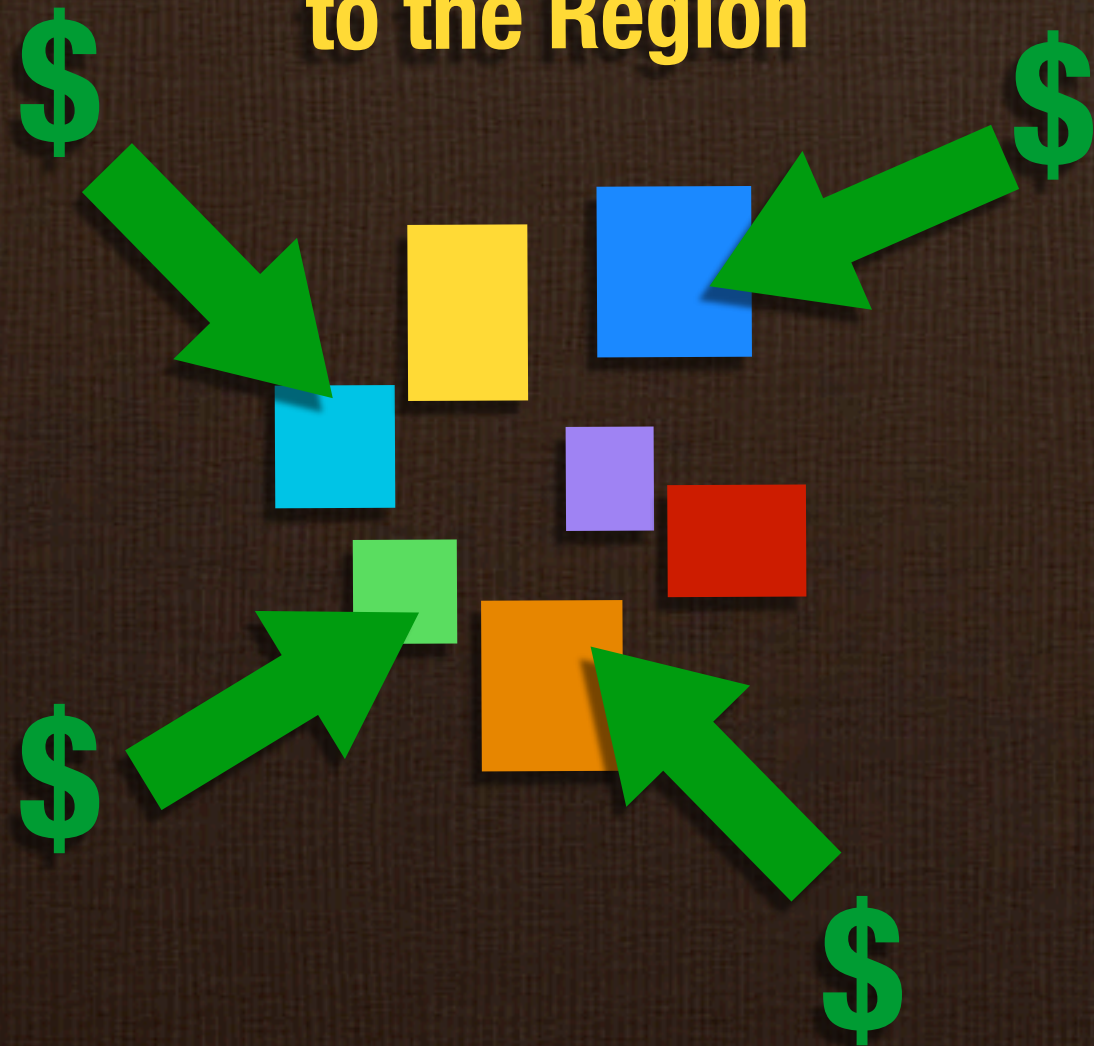
N. Mistry & J. Byron, Brookings Institution et al., April 2011



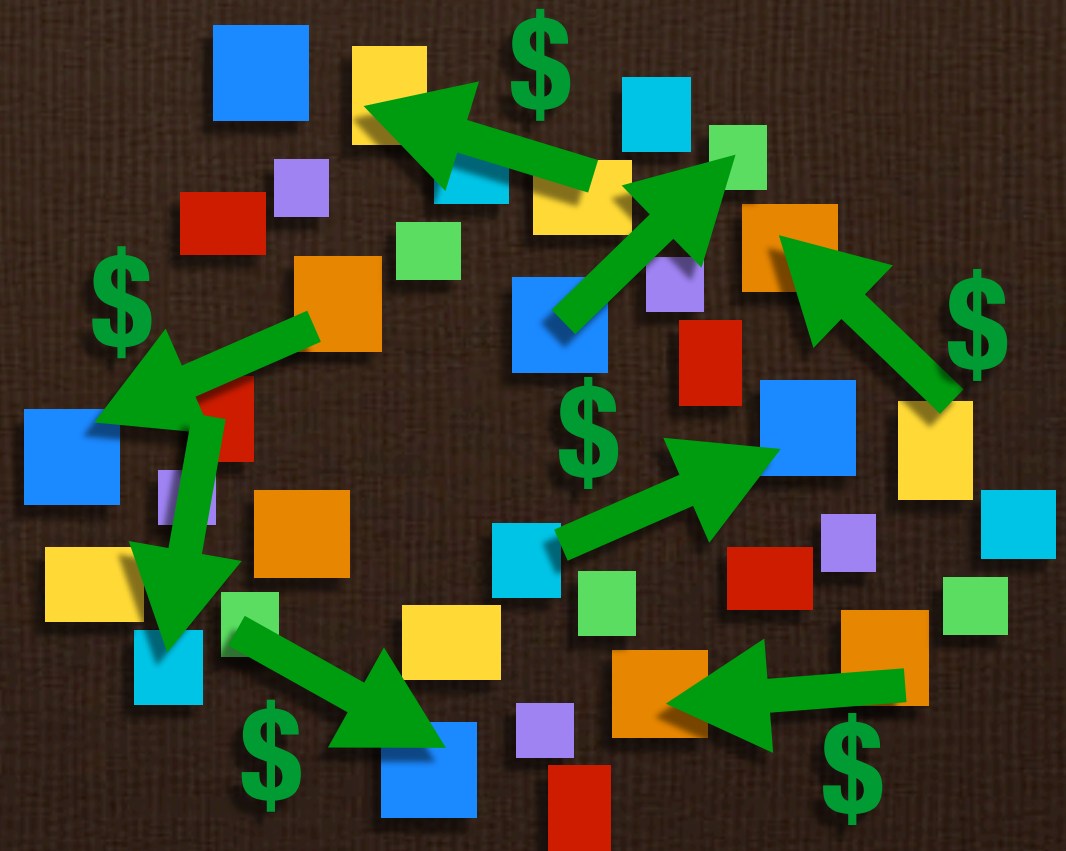
# Traded Clusters Need Strong Local Clusters

Local Supply-Chain Clusters Support Good Jobs

**Traded Clusters  
Attract Dollars  
to the Region**



**Local Clusters  
Circulate Dollars  
Within the Region**



T. Lynch et al., Initiative for a Competitive Inner City, 2010



# Strategy to Support Regional Innovation Cluster Growth

## Focus on high-impact pressure points: Connect the Dots

- Accelerate industry cluster growth

  - Cross investment “valleys of death” with flexible seed funding

  - Remove bottlenecks in workforce development system -- fully engage employers

- Ensure that world-class innovation assets remain competitive

## Enable early demonstration and planning projects

- Strengthen regional coordination

- Position groups for larger investment opportunities

## Create new economic opportunity for people and businesses

- Stimulate entrepreneurship and build economic capacity

- Create direct & deliberate supply-chain paths within high-growth clusters